8/10/16

LATE COMMENT

Dear Ms Marcus,

After my letter to you, this story appeared ~~to~~ in the Palm Springs Desert Sun today. Thought I'd send it also — it corroborates what I was saying.

Please do something! Water transfers are only permissible when they don't harm to the region of origination. This one does.

This story is so sad.

Thanks,

Chris Cochran
1020 Palm Ave.
South Pas., Cal 91030

Sudden declines of birds, fish could signal 'tipping point' at Salton Sea

Ian James, The Desert Sun 4:17 p.m. PDT August 9, 2016

Evidence is mounting that the Salton Sea could be reaching a tipping point in its ability to provide for fish and birds.

At first the biologists noticed something unusual about the dead fish washing up on the shore of the Salton Sea: All of them were fully grown, at least 7 inches long. There were no smaller fish among the carcasses pushed ashore by the lapping waves.

Then the biologists started seeing other clues in the birds. Western grebes, which normally arrive by the thousands to forage, were nowhere to be found. Thousands of Caspian terns would normally stop off to nest, but they were also missing. And only small numbers of eared grebes, with their distinctive black heads and yellowish tufts behind their eyes, bobbed in the water.

Hundreds of other eared grebes washed ashore dead earlier this year, their emaciated bodies indicating they starved.

The lack of small fish and the sudden declines of some bird species at the Sonny Bono Salton Sea National Wildlife Refuge could be signs that the lake's overburdened ecosystem is starting to unravel and deteriorate. Scientists have been predicting for years that rising salinity will eventually render California's largest lake inhospitable for even hardy tilapia, a fish introduced decades ago that has become a vital food source for birds.

The abrupt changes observed by biologists Chris Schoneman and Tom Anderson at the wildlife refuge suggest time might be running out for fish-eating birds such as pelicans that depend on the lake as a critical sanctuary. They acknowledge their concerns are based on speculation because comprehensive surveys of birds and fish haven't been carried out in years. But Schoneman said in his 12 years working at the wildlife refuge, he has never before witnessed symptoms like those that have appeared this year.

"Maybe we're at the point where salinity is limiting fish reproduction," said Schoneman, the refuge's manager. "The impact on birds from having a repressed or eliminated fish reproduction capability out here is devastating. That means the productivity of the Salton Sea is drastically reduced."

The lake, which lies 234 feet below sea level and is much saltier than the Pacific, is going through what scientists call a natural "aging process." Because it has no outlet, the lake has been growing saltier with each passing year.

A decade ago in 2006, the Salton Sea's salinity stood at 47 parts per thousand. Water samples this year show salinity levels of between 58 and 59 parts per thousand – near the estimated threshold of 60 parts per thousand at which experts have predicted the remaining fish might stop breeding.

The lake is also showing other symptoms of decay. It's burdened by an increasing load of detritus and nutrients that have accumulated for years as farm runoff has flowed in and evaporation has taken its toll.

When windstorms sweep across the desert and churn up the water, the sea regularly burps out hydrogen sulfide, which smells like rotten eggs. Fish die-offs have left the shoreline littered with skeletons.

Anderson, the assistant manager of the wildlife refuge, said he used to see small juvenile fish among the dead tilapia washing ashore. But he hasn't seen any small fish for quite a while. And birds such as western grebes and Caspian terns, which depend on small fish, have been largely absent.

This spring, Anderson noticed eared grebes weren't out in the sea where he expected to find them. Instead, the few birds he saw were congregating around drains and pools of freshwater alongside the shore. He said the birds appeared unhealthy and their feathers looked wet, suggesting they had stopped preening themselves.

"Then I started seeing dead ones in a lot of different areas, and looking at them, they were very emaciated," Anderson said. "So we suspected they just weren't getting the food resources they needed in the Salton Sea."

Anderson saw a couple hundred birds dead on the shore. Extrapolating to the entire sea, he estimated a total of 1,000 to 2,000 eared grebes may have died.

The biologists sent some of the carcasses to a laboratory to determine the cause of death. The lab analysis turned up no signs of disease, poisoning or parasites, and concluded the birds starved to death.

Eared grebes normally feed on pile worms, diving down to the bottom to dig the worms out of the mud. Anderson said he thinks the die-off suggests the numbers of worms have probably dropped.

"Biologists who talk about the Salton Sea, they talk about a tipping point in the salinity, and these might be indications that we're just about there, where the tilapia will disappear, pile worms will disappear," Anderson said, "and both of those are big food resources at the Salton Sea."

If they're unable to find food, many more birds could abandon the Salton Sea and be forced to search for habitats elsewhere. Some of those fish-eating birds range from American white pelicans to herons, black skimmers and double-crested cormorants.

The drops in some bird populations appear significant and point to an urgent need to start creating habitat by building wetlands along the receding shores, said Andrea Jones, director of bird conservation for Audubon California. She said the changes observed by the staff at the national wildlife refuge suggest "conditions that we didn't expect for a couple years are happening now."

State officials plan to start building several thousand acres of artificial wetlands using canals to carry water from the New River and the Alamo River to areas of dry shoreline. The wetlands have a dual purpose: controlling hazardous dust as the lake shrinks and creating environments where fish and birds can survive. After years of inaction, California has budgeted $80.5 million for the Salton Sea projects this year.

Audubon California's bird experts are developing a habitat plan for the state with recommendations of various habitat types, such as deep-water areas, shallow wetlands and marshes with reeds, and

acreages that different groups of bird species will need. Jones said state officials should start building those wetlands right away because without intervention, the deterioration of the Salton Sea will add to the pressures on birds that are already struggling elsewhere.

The Salton Sea lies in a basin that over millennia has at times been a dry lake bed and at others has been a lake filled with water from the Colorado River. The sea was created in its current form between 1905 and 1907, when Colorado River water broke through irrigation canals in the Imperial Valley and flooded into the basin.

Since then, the lake has been sustained largely by runoff from farms. But the amounts of water flowing into the lake have been decreasing for years. And the Salton Sea's decline is set to accelerate starting in 2018, when more water will be transferred from the Imperial Valley to San Diego County and the Coachella Valley under a water transfer deal.

During the past century, the Salton Sea has become a critical inland stop-off point for many birds along the Pacific Flyway. Some birds flock to the lake to nest. Others feed and refuel for their long migrations.

At the Sonny Bono Salton Sea National Wildlife Refuge, Schoneman said a total of 424 bird species have been spotted over the years.

If some of those birds eventually can't survive at the Salton Sea, Jones said, it's not clear where else they might go.

"That's hard to think about because there aren't many alternatives," Jones said. "The fish-eating birds, we really don't want to lose them because where are all these white pelicans going to go if they don't have the Salton Sea to spend the winter in?"

Jones acknowledged that some people question whether it makes sense to intervene.

"An argument we hear even from some of our members is, 'Why do you want to save any portion of the sea? It's artificial. Those birds will go somewhere else,'" she said. "And our argument is that it doesn't matter whether you think it was artificially created or not because a lot of the places in California these water birds used to use – like Tulare Lake – are gone."

Wetlands that birds once relied on have been drained and left dry in places from the Central Valley to the Colorado River Delta.

"So the Salton Sea is their choice now. It's their option," Jones said. She said Audubon aims to organize sea-wide bird surveys in December and in the spring.

A comprehensive bird count for the entire Salton Sea hasn't been done since 1999. A report on those surveys in 2000 estimated the total population of all waterbirds at between 434,000 and 583,000 in November and December. The surveys also found colonies with more 14,000 pairs of breeding waterbirds.

California will spend $80 million on the Salton Sea. The lake's looming problems will require much more.

Jones said it's now especially important to organize a new round of surveys to confirm the trends in bird populations.

As for fish, small tilapia can still be found in at least some parts of the lake. At the Salton Sea State Recreation Area on the north shore, tilapia have been successfully breeding in the harbor, said Kathy Dice, the superintendent of Anza-Borrego Desert State Park. Due to the small tilapia in the harbor, she said, people aren't allowed to fish there.

"That particular harbor actually has some freshwater flowing into it," said Tim Bradley, an ecology professor and director of the Salton Sea Initiative at the University of California, Irvine. "I have seen young fish there in abundance, but I think that could be an unusual habitat because of that freshwater input."

Researchers haven't carried out routine surveys of fish, pile worms or other invertebrates at the sea in recent years. Bradley and other scientists say they think it's important for more surveys to be carried out now to better understand how the ecosystem is changing.

Doug Barnum, who heads the U.S. Geological Survey's Salton Sea Science Office, said without routine monitoring, "the best anyone can provide at this point is speculation."

"There have been previous episodes of large declines in the fish population, all of which have proved to be 'false alarms,'" Barnum said in an email. He said the lack of small fish among the dead fish seen at the wildlife refuge isn't surprising given scientists' longstanding estimates of declines in fish when the salinity reaches about 60 parts per thousand.

"But unless some sort of monitoring of the live fish population is implemented," Barnum said, "there is no way to ascertain the status of fish reproduction at the Salton Sea."

As the Salton Sea grows saltier, scientists agree that sooner or later the collapse of the fish population is inevitable.

Decades ago, people fished for corvina in the lake. Then the corvina disappeared as the salinity kept increasing. Tilapia were introduced into agricultural drains near the sea a half-century ago to help control aquatic vegetation. Now the tilapia are headed the way of the corvina. What isn't clear is how much longer some fish might hold on, and whether they're hitting their limits now.

The declines in birds at the national wildlife refuge could be occurring due to dwindling populations of fish or other prey, or could be caused by other unrelated issues elsewhere on the Pacific Flyway, said Bruce Wilcox, assistant secretary for Salton Sea policy at the California Natural Resources Agency. He said the concerns raised by Schoneman and Anderson are valid, but the changes they've observed don't necessarily mean the fish are disappearing just yet.

"We're on borrowed time. If this isn't the tipping point, it's coming soon," Wilcox said. "I think we need to move forward as fast as we possibly can to develop habitat."

A task forced created by Gov. Jerry Brown last year has ordered state agencies to develop a plan for the sea and meet a short-term goal of carrying out projects to suppress dust and create habitat on 9,000 to 12,000 acres.

Wilcox said the funding in this year's budget will help the state begin to move toward that goal, building a "backbone" of canals and several thousand acres of wetlands. He said the levels of salinity and nutrients will be managed to make the wetlands better habitat than what birds now find at the sea.

Not everyone is pleased with the idea of creating wetlands in the desert. John Rasmussen, a retired physician who lives in Palm Desert, said he's concerned that flooding thousands of acres will create a perfect breeding ground for disease-carrying mosquitoes.

"To me, it represents a potential public health hazard," Rasmussen said, noting that mosquitoes in the area have tested positive for West Nile virus and St. Louis encephalitis.

Wilcox acknowledged that mosquitoes are a concern and said that issue will have to be addressed as part of the state's plans."The design of the habitat will be deliberate to reduce the potential for mosquitoes, but it won't eliminate it," Wilcox said. The wetlands will be designed so that water flows through them, he said, and most of the areas won't have heavy vegetation.Other mosquito control techniques could also be used, he said. "As a last resort, you could even spray some of the areas."

At the Sonny Bono National Wildlife Refuge, Schoneman is overseeing another wetland construction project at Red Hill Bay. The plan is to cover about 500 acres of exposed lakebed with water from the lake and the Alamo River. He said the project will be finished by next summer.

After finding the dead grebes and seeing very few Caspian terns and western grebes, Schoneman said he was wondering whether the brown pelicans would arrive from Baja California this summer as they usually do. The pelicans did come and have been diving for fish along the shore.

To check on the numbers of fish-eating birds, Anderson spent one day in June driving around the sea. He said the numbers of pelicans seemed about normal, but the numbers of cormorants were down.

The decline in cormorants, he said, is probably related to the collapse of a breeding colony on Mullet Island during the past several years. Mullet Island used to attract thousands of double-crested-cormorants, but the lake has declined so much that a land bridge has emerged, exposing the area to predators such as coyotes.

The cormorants have abandoned the site, leaving nests and bones, and have moved to other areas along the shore of the Salton Sea.

"There are still a lot here, but not in the numbers we've seen in past years," Anderson said. "They might be getting to a point where they've decided to just move on."

A number of wading birds would probably be able to find other places to forage in irrigation canals and surrounding farmland if they lose their food sources along the shoreline, Anderson said. But the fish-eating birds don't have those other options nearby.

When Schoneman drove his pickup down to the shore at the national wildlife refuge last week, he passed a pond with several islands, which were covered thickly with hundreds of cormorants. Great egrets and great blue herons soared above the cattails. Sandpipers, avocets and black-necked stilts waded in water.

Even with dozens of species of birds flying around, Schoneman said the absence of some has been notable.

In addition to the rising salinity, Schoneman said he suspects another cause may have been windy weather in April and May, which churned up the lake. When hydrogen sulfide and ammonia are stirred up, he said, that can lead to oxygen-deprived water and the effects can ripple through the ecosystem.

"You start to really realize, OK, well, the productivity of the Salton Sea is really taking a setback here, and that translates to less food for birds," Schoneman said. "If those events continue at a regular pace, that food base for the remainder of the birds is largely going to become pretty rare."

He said "one glimmer of hope" for this part of the Salton Sea is that freshwater inlets may provide sanctuaries where some fish and other prey for birds can survive.

"We need to get these wetland projects done now. The birds are literally dying now and we can't get them done soon enough," Schoneman said. "The longer it takes us to get them done, it's going to cost the birds meals, foraging and probably for some of them, their lives."

On a rocky point, he stood and looked at a group of dozens of brown pelicans resting on the shore. Some of them flapped away, then landed in the water just offshore.

Schoneman said he would normally expect them to keep flying but they seemed to be trying to conserve energy. He said he's been watching the pelicans closely as they've dived for fish, and he hopes they get enough food.

"They look skinny to me," he said, his eyes following the floating birds.

Ian James writes about water and environmental issues for The Desert Sun. Email: Ian.James@desertsun.com Twitter: @TDSIanJames

Felicia Marcus, Chair

State Water Resources Control Board

1001 I Street, 24th Floor

Sacramento, Ca. 95814

sent 8/7/16

Dear Ms. Marcus,

"If nothing is done about the mitigation of existing impacts then we are going to have a catastrophe on our hands in terms of public health." (Brad Poirez, Imperial County Air Pollution Control District)

Those words were spoken years ago. They were prophetic. We now have a catastrophe. You and your predecessors at the State Water Resources Control Board are the directly responsible parties.

The QSA water transfer, empowered by WRO 20020013, caused this disaster. Among other things, salinity has skyrocketed to 58 ppt. The lake level has dropped 8 feet (16%). 11,000 acres of new playa is exposed. The Corvina fishery has been completely destroyed. This species is now extinct at the Salton Sea. Mullet Island rookery, its land bridge exposed, has been ruined by coyotes. There are increasing severe hydrogen sulfide episodes. Dust has gotten worse. Aesthetics have deteriorated significantly.

Last September California appointed Bruce Wilcox Assistant Secretary of Salton Sea Policy, and provided 2 million to the Salton Sea Authority to hire Dr. Bruce Brownlee, their consultant in an earlier uninspiring effort, to write another plan (there had been at least 37 by others before this). Dr. Brownlee's hermetic ideas form the basis of the State's current short and medium term effort.

More or less simultaneously, the Salton Sea Management Program's Project Committee, meeting without public notice or input of any kind, picked over the State Department of Water Resources' financially bloated "no regrets" projects (see the State Perez audit) and wove them into a response that became the Garcia AB1095 report.

In September 2015, right after his appointment, I contacted Assistant Secretary Wilcox, trying to get on his listserv to participate in the dialog. I was told there was none. I asked to attend meetings. I was told they were private, for federal and state officials only--that there would be public meetings later.

At the time, I knew there was a danger that policy would be formed without public input. That turned out to be correct.

For five months I heard nothing, so I finally provided the Chair of the Salton Sea Management Program Public Outreach Committee with a list of places to publically post notifications of upcoming meetings, agendas and minutes (see attachment A)---she never did anything. I emailed the

Assistant Secretary, asking him to be careful to include the public. I published a letter in The Desert Sun asking pointedly that State Salton Sea meetings be public. I was subsequently allowed to attend presentations by potential contributors to a Long Range Plan, but told comment was not allowed.

All of this went against the Bagley-Keene Act of California.

What happened to me can only be described as typical of what occurred in the planning process for the public at large. We were shut out. I think this is part of why the fruits of Brownlee's planning are not now supported by a majority of the people who live around the Sea. The affected citizens never had a chance to help develop them. It's also why they are incongruent with what needs to be done on the ground.

Even now, the public meetings being held across the State are pro forma, top-down lectures informing citizens of decisions. Speeches are given, comments are taken but nothing evolves. The State's response, as usual, is autocratic.

Dr. Brownlee's plan puts a Band-Aid on a whale. It admits to 65,000 acres (98 square miles) of exposed playa at build out. That's about the same size as the problem at Owens Lake when EPA sued in 1982. It's exorbitantly expensive (3 billion dollars). It doesn't begin to solve air quality issues in the least. And it's very ugly. It'll use up all the State's money and leave the residents in worse shape than they are now.

It's a colossal violation of the public's right to clean air and to the natural beauty the region inherently possesses. And, since the Salton Sea is the northern arm of the Colorado River delta (see attachment B), it enjoys these due to public trust law.

The problem is not going away in 2018 when the remedial water stops flowing. It's going to get much worse. And, it's going to continue for a long time. Until issues are really and truly solved at the Salton Sea, I continue to urge you to:

- limit water transfers until the State catches up with restoration:
- target a sea level that is sustainable and constant
- base future water shipments on public trust values using the precedent your predecessors followed at Mono Lake 20 years ago using CEQUA to avoid adverse environmental impacts.

Thank you for this chance to respond.

Sincerely,

Chris Cockroft

Christopher W. Cockroft

1020 Palm Avenue

South Pasadena, California 91030

Attachment A

Places to post notifications:

Physical locations:

Salton Sea Authority Headquarters

Coachella Valley Water District H Q

County of Riverside H Q, Indio

Imperial Irrigation District H Q

Imperial County Administrative Headquarters

Imperial County Public Library H Q

State E.P.A. Building, Sacramento

Mono Lake Committee H Q, West L.A.

Salton Sea Sense H Q

Electronic Locations:

"The Salton Sea" on Facebook

Salton Sea Authority website and Facebook Pages

Salton Sea Sense

State Water Resources Control Board webpage

State Department of Water Resources webpage

Attachment "B"